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ORIGINAL ARTICLE

Study to Assess the Autopsy in Relation with Age and Gender in Tertiary Care Hospital of Hyderabad, Sindh, Pakistan

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ABSTRACT

Objective: To assess the autopsy in relation with age and gender in tertiary care hospital of Hyderabad, Sindh, Pakistan.

Study Design: Retrospective, observational and non-interventional study

Place and Duration of Study: Medicolegal Department of Liaquat University of Medical and Health Sciences Hyderabad from 1st January 2017 to 31st December 2018.

Methodology: Three hundred and eighty-one patients were enrolled.

Results: According to cause of death, 88 (23.10%) were died due to road traffic accident, firearm injury 73 (19.16%) and asphaxial death 70 (18.37%), assault 65 (17.06%), poisoning 37 (9.71%), electric shock 30 (7.87%) and undetermined 18 (4.72%) respectively.

Conclusion: The relatable factors such as age and gender with the suicidal cases in results of autopsy examination which plays the most relevant role in the medical practices even after the advancement of diagnostic technologies.

Key words: Assess, Autopsy, Age, Gender, Tertiary care hospital

INTRODUCTION

The autopsy is considered as one of the marginal uses in the clinical practices.[1] The relevance of the autopsy in clinical practices is well accepted and recognized since the clinical autopsy provides the relatives with the accurate information related to deaths with feedbacks, diagnosis and the treatment, thus making the clinical autopsy a tool of quality control in health care system.[2]

The autopsy with the evidence based diagnostic technologies in the modern medicines is well recognized yet, there are some divergences in the clinical diagnosis and post-mortem finding.[3] The significant discrepancies of clinical autopsy include the major diagnosis as (class-1). After the diagnosis of such discrepancies the autopsy helps to improve the accurately in the deaths certificates along with the epidemiological database. Moreover, the clinical autopsy improves the medical knowledge by providing the evidence-based findings, and source of additional biomedical research such as, obtaining the true impressions of normal and pathologically effected tissues.[4]

In spite of all the mentioned benefits and support to clinical autopsy in literature, the clinical autopsy rate has been on the declined position in past few decades.[5] Moreover, the medical researchers have not developed any improved, modern and invasive post-mortem conventional methods. The different research studies have supported the local and national trends in the clinical autopsy rates, such as few supported the Dutch autopsy and evaluated the potential factors affecting the clinical autopsy.[6]

The age and other multiple factors might affect the findings of clinical autopsy. The findings of clinical autopsy are crucial in obtaining the better and improved understanding of human body and hence these findings are precious in understanding how the infection has affected the body.[7] The histopathological evidences in clinical autopsy have supported the damage of tissues many times in the autopsy findings. There are thousands of clinical investigations in clinical autopsy that supports the major post-mortem diagnosis yet there are diagnostic errors in 30% cases.[8] The significant inconsistency decreasing over the period of time, though 4-7% cases nearly touch the discrepancies.[9]

In the modern practices the autopsy usually indicates the detailed examination, an autopsy needs the careful medical examiners and staff to expand the deal of efforts to identify the unattended death cases, sudden death cases, unexpected deaths cases, and deaths due to traumas.[10,11] These cases are unified objective of the comprehensive recognition while staying within the jurisdiction and medical corner.[12-14] The deaths report along with the clinical autopsy findings are the end results, which arises from the combination reports of investigational examinations, toxicological evaluations, medical examination and autopsy findings.[15,16]

The main objective of the study was to assess the autopsy in relation to age and gender in different tertiary care setups of Hyderabad Sindh Pakistan.

MATERIALS AND METHODS

This retrospective, observational and non-interventional study was conducted in Medicolegal Section of Liaquat University of Medical and Health Sciences Hyderabad. Those patients whose age was 18 or more than 18 years were included. Based on age, a total of 381 were recorded from 1st January 2017 to 31st December 2018. The data were retrieved by the consent of concerned relatives for research purpose. Both genders were included in the study. The demographic information like age and gender by analyzing various factors and assess the cause of death. The data were analyzed descriptively by using SPSS-25.

RESULTS

There were 289 (75.85%) males and 92 (24.1%) females. Two hundred and twenty-four (58.7%) belonged to age 39 to 59 years followed by 103 (27.1%) belonged to age from 18 to 38 years and 54 (14.2%) belonged to age ≥ 60 respectively (Table 1).

There are different causes of death reported during the observation of samples and report analysis. Out of 381 samples, 88 were died due to road accident, 73 were died from firearm injury, 70 were died from asphaxial death, 65 were died due to assault, 37 were died due to poisoning, 30 were died due to electric shock and 18 were due to undetermined cause (Table 2).

Eighty-eight were died due to road traffic accident and male was 68 while female was 20. Due to firearm injury i.e., 73 samples, the male was 58 and female was 15. Due to asphaxial death i.e., 70 samples, the male was 54 and female was 16. Due to assault reason i.e., 65 samples, the male was 52 and female was 13. Due to poisoning i.e., 37 samples, the male was 30 and female was 7. Due to electric shock i.e., 30 samples, the male was 15 and female was 15 and in the last 18 patients were died due to undetermined reason and male was 12 and female was 6 (Table 3). Eighty eight were died due to road traffic accident and based on age i.e. from 18-38 years 24, 39-59 years 49 and60 or more than 60 years were 15 samples,73 were died due to firearm injury and based on age i.e. from 18-38 years 13, 39-59 years 54 and 60 or more than 60 years were 6 samples, 70 were died due to asphaxial death and based on age i.e. from 18-38 years 17, 39-59 years 42 and 60 or more than 60 years were 11 samples, 65 were died due to assault and based on age i.e. from 18-38 years 16, 39-59 years 43 and 60 or more than 60 years were 6 samples, 37 were died due to poisoning and based on age i.e. from 18-38 years 15, 39-59 years 14 and 60 or more than 60 years were 8 samples, 30 were died due to electric shock and based on age i.e. from 18-38 years 9, 39-59 years 16 and 60 or more than 60 years were 5 samples and lastly based on age, the undetermined cases were 18 and from 18-38 years 9, 39-59 years 6 and 60 or more than 60 years were 3 samples (Table 3).

Table 1: Demographic information of the patients (n=381)

Variable	No.	%
Gender		
Male	289	75.85
Female	92	24.15
Age (years)		
18-38	103	27.1
39-59	224	58.7
≥ 60	54	14.2

Table 2: Frequency of causes of death (n=381)

Cause of death	No.	%
Road Traffic Accident	88	23.10
Fire Arm Injury	73	19.16
Asphaxial Death	70	18.37
Assault	65	17.06
Poisoning	37	9.71
Electric Shock	30	7.87
Undetermined	18	4.72

Table 3: Causes of death relation with gender and age (n=381)

Variable	Cause of Death						
	Road traffic accident (n=88)	Fire arm injury (n=73)	Asphaxial death (n=70)	Assault (n=65)	Poisoning (n=37)	Electric shock (n=30)	Undetermined (n=18)
Gender							
Male	68 (77.27%)	58 (79.45%)	54 (77.14%)	52 (80%)	30 (81.08%)	15 (50%)	12 (66.67%)
Female	20 (22.73%)	15 (20.55%)	16 (22.86%)	13 (20%)	7 (18.92%)	15 (50%)	6 (33.33%)
Age (years)							
18 – 38	24 (27.27%)	13 (17.81%)	17 (24.28%)	16 (24.61%)	15 (40.54%)	9 (30%)	9 (50%)
39 – 59	49 (55.68%)	54 (73.97%)	42 (60%)	43 (66.16%)	14 (37.84%)	16 (53.33%)	6 (33.33%)
≥ 60	15 (17.04%)	6 (8.21%)	11 (15.72%)	6 (9.23%)	8 (21.62%)	5 (16.67%)	3 (16.67%)

DISCUSSION

The pathological investigations, a medical examiner working on the clinical autopsy determines the deaths cases and all possibilities associated with the deaths.[15] The deaths cases require the entire information along with the manners of deaths in all cases for clinical autopsy findings.[16] The possible probability of death cases may be traumatic injuries, suicides, and un determined factors. The study of all retrospective cases evaluated the ages and the genders of the cases, whereas the gender wise distribution showed the majority cases were male 75.8%, which is quite similar to the study conducted on the gender and autopsy findings[16-17], however the only 24.1% were female cases which is a small number in comparison to males. The autopsy findings showed the more cases were in middle ages i.e., between the age group 39-59 years, however the less cases were observed in older ages which can be relatable to the study conducted in past.

In determination to the reasons of deaths, 70 cases were asphyxia deaths and the similar results were shown in a study conducted on the autopsy finding and suicidal cases.[18] The national Association of medical examiners provides the accurate guidance to determines the possible

circumstances of deaths, and manners of autopsy findings.[19]

The results of the present study showed total of 88 cases were due to road traffic accident and 77.2% where majority of cases were males than females which was only 22.7%, the results of our study are in accordance with the findings.[20] The poising cases were more observed in the middle ages 39-59 years which is quite similar to results of our study[21], however the cases with electric shocks were more than half of all cases significantly in between middle cases (53.3%). The greater number of cases in middle age group might be related to the self-inflicted acts, or intention of take life as reported by the study.[22]

The more numbers of cases deaths due to fire injury were reportedly 79.45% were male and female 20.5% similarly found in a study.[23,24] Due to asphaxial death i.e., the male cases were around 77.1% and female 22.8% which is supported by the past study conducted on the cases of asphaxial deaths.[25] The deaths cases due to poisoning observed that male was 81.0% the study supports the finding of our study that minimum number of patients were died due to suffocation. The autopsy findings might be crucial in founding the causes of deaths and assisting in particular injuries. The study found the significant clinical diagnosis in post-mortem cases, and also supports the importance of post-mortem examination in unexpected diagnosis.

CONCLUSION

The finding of this study initiated the relatable factors such as age and gender with the suicidal cases in results of autopsy examination which plays the most relevant role in the medical practices even after the advancement of diagnostic technologies. In our experience the appropriate autopsy findings requires the expert staff in the intensive care units (ICU) which can support and persuade the importance of autopsies in teachings and quality assurance programs related to clinical autopsies along with the collaboration of pathology experts in hospital administration as part of cost supporting team. Furthermore, the post-mortem examination should be incorporated as integral yet useful tool for each patient who dies in ICU.

REFERENCES

1. Geller SA. Autopsy. Sci Am 1983; 248(3): 124-37.
2. Conwell Y, Duberstein PR, Cox C, Herrmann JH, Forbes NT, Caine ED. Relationship of age and Axis I diagnoses in victims of completed suicide: a psychological autopsy study. Am J Psychiatr 1996.
3. Duberstein PR, Conwell Y, Caine ED. Age differences in the personality characteristics of suicide completers: preliminary findings from a psychological autopsy study. Psychiatry 1994; 57(3): 213-24.
4. Chen EY, Chan WS, Wong PW, Chan SS, Chan CL, Law YW, et al. Suicide in Hong Kong: a case-control psychological autopsy study. Psychological Med 2006; 36(6): 815-25.
5. Burton JL. The history of the autopsy. In: The Hospital Autopsy CRC Press, 2010; 1-10.
6. Appleby L, Cooper J, Amos T, Faragher B. Psychological autopsy study of suicides by people aged under 35. Br J Psychiatry 1999; 175(2): 168-74.
7. Wong PW, Chan WS, Chen EY, Chan SS, Law YW, Yip PS. Suicide among adults aged 30–49: a psychological autopsy study in Hong Kong. BMC Public Health 2008; 8(1): 1-9.
8. Arafat SY, Mohit MA, Mullick MS, Kabir R, Khan MM. Risk factors for suicide in Bangladesh: case–control psychological autopsy study. BJ Psych Open 2021; 7(1).
9. Suominen K, Isometsä E, Heilä H, Lönnqvist J, Henriksson M. General hospital suicides - a psychological autopsy study in Finland. General Hospital Psychiatry 2002; 24(6): 412-6.
10. Foster T, Gillespie K, McLelland R, Patterson C. Risk factors for suicide independent of DSM–III–R Axis I disorder: Case–control psychological autopsy study in Northern Ireland. Br J Psychiatry 1999; 175(2): 175-9.
11. Pereira Jr FJ, Lundh H, Westesson PL. Morphologic changes in the temporomandibular joint in different age groups: an autopsy investigation. Oral Surg Oral Med Oral Pathol 1994; 78(3): 279-87.
12. Dozono K, Ishii N, Nishihara Y, Horie A. An autopsy study of the incidence of lacunes in relation to age, hypertension, and arteriosclerosis. Stroke 1991; 22(8): 993-6.
13. Pirisi M, Avellini C, Fabris C, Scott C, Bardus P, Soardo G, Bartoli E. Portal vein thrombosis in hepatocellular carcinoma: age and sex distribution in an autopsy study. J Cancer Res Clin Oncol 1998; 124(7): 397-400.
14. Duberstein PR, Conwell Y, Caine ED. Age differences in the personality characteristics of suicide completers: preliminary findings from a psychological autopsy study. Psychiatry 1994; 57(3): 213-24.
15. Nashelsky MB, Lawrence CH. Accuracy of cause of death determination without forensic autopsy examination. Am J Forensic Med Pathol 2003; 24(4): 313-9.
16. Pomara C, Fineschi V, Scalzo G, Guglielmi G. Virtopsy versus digital autopsy: virtuous autopsy. La radiologia medica 2009; 114(8): 1367.
17. Sarode VR, Datta BN, Banerjee AK, Banerjee CK, Joshi K, Bhusnurmath B, et al. Autopsy findings and clinical diagnoses: a review of 1,000 cases. Human Pathol 1993; 24(2): 194-8.
18. Roosen J, Frans E, Wilmer A, Knockaert DC, Bobbaers H. Comparison of premortem clinical diagnoses in critically ill patients and subsequent autopsy findings. In Mayo Clinic Proceedings 2000; 75(6): 562-7.
19. Stevanovic G, Tucakovic G, Dotlic R, Kanjuh V. Correlation of clinical diagnoses with autopsy findings: a retrospective study of 2,145 consecutive autopsies. Human pathology 1986; 17(12): 1225-30.
20. Marshall HS, Milikowski C.Comparison of clinical diagnoses and autopsy findings: six-year retrospective study. Arch Pathol Lab Med 2017; 141(9): 1262-6.
21. Spiliopoulou C, Papadodima S, Kotakidis N, Koutselinis A. Clinical diagnoses and autopsy findings: a retrospective analysis of 252 cases in Greece. Arch Pathol Lab Med 2005; 129(2), 210-14.
22. Coradazzi AL, Morganti ALC, Montenegro MRG. Discrepancies between clinical diagnoses and autopsy findings. Brazilian J Med Biol Res 2003; 36: 385-91.
23. Pastores SM, Dulu A, Voigt L, Raoof N, Alicea M, Halpern NA. Premortem clinical diagnoses and postmortem autopsy findings: discrepancies in critically ill cancer patients. Critical Care 2007; 11(2), 1-6.
24. Yang GH, Philips MR, Zhou MG, Wang LJ, Zhang Y, Xu D. Understanding the unique characteristics of suicide in China: national psychological autopsy study. Biomedical Environmental Sci 2005; 18(6): 379.
25. Azmak D. Asphyxial deaths: a retrospective study and review of the literature. Am J Forensic Med Pathol 2006; 27(2): 134-44.